SULFUR AND ITS IMPORTANCE IN FOOD PRODUCTION

CONCLUSIONS AND RECOMMENDATIONS

OF THE

SPECIAL SUBCOMMITTEE ON FERTILIZER AND FARM MACHINERY

OF THE

COMMITTEE ON AGRICULTURE HOUSE OF REPRESENTATIVES

Based on hearings before the subcommittee
February 20–23, 1951

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LETTER OF TRANSMITTAL

FEBRUARY 28, 1951.

Hon. HAROLD D. COOLEY,
Chairman, House Committee on Agriculture,
House of Representatives, Washington. D. C.

DEAR MR. CHAIRMAN: In response to general concern over the possibility of curtailed fertilizer supplies in 1951, and the effect of such curtailment on food production, your Special Subcommittee on Fertilizer and Farm Machinery has recently completed 4 days of intensive hearings on this subject.

Because the most immediate threat to adequate fertilizer production appears to be a shortage of those fertilizer materials (ammonium sulfate and phosphate fertilizers) in the manufacture of which sulfuric acid is an essential ingredient, the hearing was directed chiefly at an examination of the sources of sulfur and sulfuric acid, the distribution of these materials, and the means whereby additional supplies of those basic materials may be made available.

The subcommittee transmits herewith for the information of the committee, and of those concerned with this subject, its conclusions and recommendations regarding the production and distribution of sulfur and sulfuric acid and the fertilizers made from these materials.

Sincerely yours,

THOMAS G. ABERNETHY,
Chairman, Special Subcommittee on Fertilizer and Farm Machinery.

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SULFUR AND ITS IMPORTANCE IN FOOD PRODUCTION

Conclusions and Recommendations of the Special Subcommittee on Fertilizer and Farm Machinery, Based on the Fertilizer and Sulfur Hearings (February 20–23, 1951)

Part I. Conclusions

SULFUR SUPPLY

1. Demand (including exports) will exceed supply in 1951 by more than 500,000 tons.
2. There is little immediate prospect of increasing the supply of native sulfur.
3. Except for re-use of acid now being wasted, the problem for 1951 is to distribute available supply where it will do the most good.

AGRICULTURE'S POSITION

4. There are no major stockpiles of any agricultural commodity—the food and fiber we expect to consume in 1951–52 will have to be produced this year.
5. Abundant production is the only way to get the food we will need as an instrument of peace throughout the world and the best way to prevent inflationary price increases here at home.
6. Such production cannot be achieved without tremendous quantities of fertilizer—more fertilizer, not less, than was used last year. Sulfuric acid is a basic ingredient of ammonium sulfate and of almost all phosphate fertilizers.
7. In 1949 (the latest year for which final figures are available) 34.4 percent of the sulfuric acid produced in the United States was used in making fertilizer. Additional large quantities of sulfur and sulfuric acid went into insecticides and other agricultural chemicals. Thus, agriculture was by far the Nation's largest single user of sulfur.
8. If farmers are able to meet the increased acreage goals established by the Secretary of Agriculture for 1951, they will require a minimum of 479,000 more tons of phosphate and nitrogen in fertilizer than they used in 1950 to produce the quantity of products required. If farmers are not able to plant the full acreage requested—and there is indication they may not be able to do so—they will require even more fertilizer to produce the quantity of food and fiber we need.

DISTRIBUTION POLICIES

9. It is clear to the committee that at the present time critical materials—including sulfur and sulfuric acid—are being allocated and distributed without any policy determination as to the essential nature of agricultural production and the necessity of fertilizer to that production, apparently on the assumption that farm production is automatic and will occur in ample volume whether farmers have fertilizer or not.

10. The head of the operating division of the National Production Administration responsible for sulfur distribution testified that he has no policy directive to guide him in determining, as between agricultural and other claimants, how or with what priority scarce materials are to be distributed. Nor does he have within his division any consultant qualified or even purporting to present the requirements of agriculture.

11. The present system of establishing priorities for scarce materials by "DO" ratings and orders completely disregards the requirements of agriculture and may very quickly create a situation where the availability of materials for agricultural purposes will be reduced to zero.

12. No agency representing agriculture is authorized to issue these DO ratings whereas numerous other procurement agencies are authorized to do so—even for such items as office equipment and furniture—and apparently no one has any idea how many DO ratings are being issued, what quantity of material is being covered by such orders, or what use is being made of this material after it has been requisitioned in this manner.

13. As a further indication of the manner in which the requirements of agriculture are being disregarded, the Department of Agriculture has not been consulted in the drafting of an allocation order for sulfur and other chemicals, which it was stated will soon be issued. Although a draft of such a control order is known to exist and is said to be even now "making the rounds" of the defense-production agencies, the Deputy Administrator of the Production and Marketing Administration, United States Department of Agriculture, testified that neither he nor anyone else in the Department of Agriculture had been able to see a copy of the proposed order although both written and oral representations of the Department's interest in this matter had been made to National Production Administration and other agencies.

EXPORTS

14. For the past 25 or 30 years the United States has been the chief world supplier of elemental sulfur, although sulfur occurs in many other countries and is found in other forms, such as pyrites, plentifully throughout the world. During this period, exports have averaged about 30 percent of United States' production.

15. Although exports have been reduced somewhat for the first quarter of 1951, they are still being made at the rate of 800,000 tons per year (not including Canada), equivalent to about 22 percent of anticipated 1951 production of elemental sulfur.

16. Spain is a virtually unlimited source of high-grade pyrites, but use of these pyrites by European industry has been declining since

the war—while at the same time use of American sulfur has been increasing—and it is obvious that there has been no real effort on the part of the Economic Cooperation Administration to get European industry to use Spanish pyrites, rather than American sulfur, as its source of sulfuric acid.

17. In the event of war, European industry would probably have to depend almost entirely on European sources of sulfur and sulfuric acid, since it would probably be impossible to ship American sulfur across the ocean. It would appear to be the course of prudence, therefore, to make the shift to those sources now.

STRETCHING PRESENT SUPPLIES

18. For 1951 there appears to be little prospect of bringing into production any new or additional sources of sulfur.

19. There appear, however, to be a number of ways in which sulfuric acid, which is now being wasted or discarded after its use in an industrial process, can be reclaimed for the production of fertilizer or rehabilitated and reused in other industry. There appear to be substantial possibilities of these savings in the petroleum and natural gas industry, steel manufacture, chemical manufacture, the paper industry, and elsewhere.

20. Most of these recapture or reuse possibilities are apparently unprofitable at the present price of elemental sulfur, but are chemically and industrially feasible.

21. More effective use of the phosphate fertilizers which are available to agriculture might be obtained by a review by the appropriate Federal and State authorities of mixed fertilizer formulas, with the objective of reducing the phosphate application to those crops which can get along temporarily on smaller amounts of this plant food, so that the available material may be utilized for those crops where increased production is directly dependent on phosphate application.

PLANNING FOR THE FUTURE

22. The prospect of a substantial increase in the production of elemental sulfur (brimstone) does not appear to be encouraging.

23. However, sulfur is one of the most plentiful elements in nature and occurs in many different forms, from many of which the sulfur can be recovered (at a price) as an adjunct to some other industrial process.

24. An official of the Solid Fuels Administration testified, for example, that the coking industry could obtain from gases of its own ovens now being wasted 60 percent of the sulfur it needs to convert all its ammonia into ammonium sulfate.

25. Other practical and substantial sources of sulfur (or sulfuric acid) are sour natural gas, smelter fumes, industrial fumes and gases, the petroleum industry, pyrites, and gypsum.

26. As part of the defense program, billions of dollars worth of steel plants, chemical plants, petroleum refineries, and other industrial facilities are being approved for construction with accelerated amortization or other governmental assistance. Many of these facilities will both consume sulfuric acid and produce gases or other wastes from which sulfuric acid might be manufactured or reclaimed.

27. In spite of the shortage of elemental sulfur and the necessity of developing alternative sources of sulfur and sulfuric acid, persistent inquiry by the committee failed to disclose any evidence that defense agencies are planning for or requiring byproduct sulfur production as they approve and assist this defense-plant expansion.

PART II. RECOMMENDATIONS

1. That those in charge of the defense program recognize and act upon the elementary fact that agriculture is an essential defense industry and should be given that status in any allocation of critical materials.

2. That advisers and consultants under the supervision and direction of the Secretary of Agriculture qualified and authorized to present the requirements of agriculture, be appointed to participate with the policy-making officials at the highest levels of defense-program administrations, agencies, and authorities.

3. That the export program be critically reviewed with the objective of finding out how much American sulfur the industries of other countries can do without—not how much they would like to have.

4. That the present users of sulfur and sulfuric acid be carefully surveyed to discover how much of this material now being wasted or discarded can be recaptured or reused and that positive steps be taken to see to it that this material is saved and utilized.

5. That all possible long-range sources of sulfur and sulfuric acid be examined and analyzed by competent and appropriate governmental agencies, and that sulfur recovery, production, or reconstitution facilities be required, where appropriate, as a condition of the approval of any facility, for accelerated amortization or any other such governmental assistance.

6. That research be intensified to discover whether there is a practical and economic method of producing phosphate fertilizer without sulfuric acid or with proportionately reduced quantities of that material.

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